

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (currently amended): A method for calibrating a driver in a dual actuator disk drive, comprising:

determining a measured capacitance associated with at least one piezoelectric element prior to positioning the piezoelectric element over a disk surface including the

5 steps of:

driving said at least one piezoelectric element to a predetermined starting voltage;

supplying a predetermined current to said at least one piezoelectric element for a predetermined time period;

10 measuring a second voltage associated with said at least one piezoelectric element after said supplying step; and

calculating said measured capacitance based on said measuring step, wherein said calculating step is performed based on the following equation:

$$C = I * (T / (V_{m2} - V_{m1}))$$

15 
$$C = I * T / (V_{m2} - V_{m1})$$

where C is the measured capacitance, I is the current supplied to said at least one piezoelectric element during said ~~supplying~~ supplying step, T is the predetermined time period[[:]], V<sub>m2</sub> is the second voltage, and V<sub>m1</sub> is the starting voltage; and

adjusting said driver based on said determining step.

Claim 2 (currently amended): A method, as claimed in claim 1, further comprising:

secondly determining a second measured capacitance associated with said at least one piezoelectric element after a predetermined time period following said adjusting step;

5 and

secondly adjusting said driver based on said ~~determining~~ step of secondly determining.

Claim 3 (cancelled).

Claim 4 (cancelled).

Claim 5 (currently amended): A method for calibrating a driver in a dual actuator disk drive, comprising:

determining a measured capacitance associated with at least one piezoelectric element prior to positioning the piezoelectric element over a disk surface including the

5 steps of:

driving said at least one piezoelectric element ~~[[is]]~~ to a predetermined starting voltage;

supplying a predetermined current to said actuator element;

starting a timer;

- 10 monitoring a voltage associated with said at least one piezoelectric element;
- stopping said timer to get an elapsed time when said voltage reaches a predetermined voltage level in said monitoring step; and
- calculating said measured capacitance based on said elapsed time, wherein
- 15 said calculating step is performed based on the following equation:

$$C = I * (T / (V_{m2} - V_{m1}))$$

$$C = I * T / (V_{m2} - V_{m1})$$

- where C is the measured capacitance, I is the current supplied to said at least one piezoelectric element during said supply step, T is the elapsed time,  $V_{m2}$  is the
- 20 predetermined voltage level, and  $V_{m1}$  is the starting voltage; and
- adjusting said driver based on said determining step.

Claim 6 (cancelled).

- Claim 7 (currently amended): A method, as claimed in claim 1, wherein said adjusting step includes:
- determining a difference between said measured capacitance and an expected capacitance; and
- 5 adjusting a gain associated with said driver based on said ~~determining~~ step of determining a difference.

Claim 8 (original): A method, as claimed in claim 1, wherein said driver is a voltage control driver.

Claim 9 (original): A method, as claimed in claim 1, wherein said driver is a charge control driver.

Claims 10-18 (cancelled).

Claim 19 (currently amended): A method for determining a number of piezoelectric elements present in a dual actuator hard disk drive, comprising:

determining a total capacitance associated with at least one piezoelectric element including the steps of:

5 driving said at least one piezoelectric element ~~[[is]]~~ to a predetermined starting voltage;

supplying a predetermined current to said at least one piezoelectric element for a predetermined time period;

10 measuring a second voltage associated with said at least one piezoelectric element after said supplying step; and

calculating said total capacitance based on said measuring step, wherein said calculating step is performed based on the following equation:

$$C = I * (T / (V_{m2} - V_{m1}))$$

$$C = I * T / (V_{m2} - V_{m1})$$

15 where  $C$  is the total capacitance,  $I$  is the current supplied to said at least one piezoelectric element during said supplying step,  $T$  is the predetermined time period[[;]],  $V_{m2}$  is the second voltage, and  $V_{m1}$  is the starting voltage;

ascertaining a number of piezoelectric elements present in said disk drive based on said determining step.

Claim 20 (cancelled).

Claim 21 (cancelled).

Claim 22 (currently amended): A method for determining a number of piezoelectric elements present in a dual actuator hard disk drive, comprising:

determining a total capacitance associated with at least one piezoelectric element;

ascertaining a number of piezoelectric elements present in said disk drive based

5 on said determining step, wherein said ascertaining step comprises:

dividing said total capacitance by an expected capacitance and rounding to the closest natural number.

Claim 23 (previously presented): A method, as claimed in claim 22, wherein said expected capacitance is approximately a capacitance associated with a single piezoelectric element.

Claim 24 (new): A method, as claimed in claim 5, wherein said adjusting step includes:

determining a difference between said measured capacitance and an expected capacitance; and

5 adjusting a gain associated with said driver based on said step of determining a difference.

Claim 25 (new): A method, as claimed in claim 5, wherein said driver is a voltage control driver.

Claim 26 (new): A method, as claimed in claim 5, wherein said driver is a charge control driver.

Claim 27 (new): A method, as claimed in claim 19, wherein said ascertaining step comprises:

dividing said total capacitance by an expected capacitance and rounding to the closest natural number.

Claim 28 (new): A method, as claimed in claim 27, wherein said expected capacitance is approximately a capacitance associated with a single piezoelectric element.